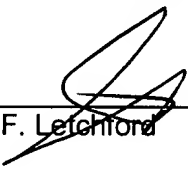


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: :
Vincent PAVIS, et al. :
: :
Application No.: 09/900,596 :
: Group Art Unit: 1617
Filed: July 6, 2001 :
: Examiner: E. Webman
For: COMPOSITION AND PROCESS FOR :
TREATING POLLUTION :
: :
: :
Attorney Docket No.: 12776-0001 :

I, John F. Letchford, Registration No. 33,328, certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 13, 2003.



John F. Letchford

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPELLANTS' BRIEF PURSUANT TO 37 CFR § 1.192

The above-identified reissue application comes before the United States Patent and Trademark Office ("USPTO") Board of Appeals and Interferences ("Board") from a Final Rejection of claims 1-3, 5-12, 14 and 16-24 dated May 13, 2003.

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I. REAL PARTY IN INTEREST

The real party in interest in the present appeal is International Environmental Products, LLC ("IEP"), having a principal place of business at 1001 E. Hector Street, Suite 401, Conshohocken, Pennsylvania 19428 USA, as evidenced by an assignment of the entire right, title and interest in and to the application ("second assignment") from F-Five Technology, Inc. ("F-Five"), having a principal place of business at 1253 11th Street, Suite 2, Santa Monica, California 90401 USA, which second assignment bears an effective date of March 7, 2003. F-Five acquired ownership of the application by virtue of an assignment from the inventors, Messrs. Vincent and James Pavis, ("first assignment"), which first assignment bears an effective date of August 1, 2000. The first and second assignments were mailed to the USPTO by prior counsel of record on September 18, 2003 and were received by the USPTO on September 22, 2003. As of this writing, the undersigned awaits evidence of recordation of those assignments from the USPTO.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, IEP or the undersigned which will directly affect or be directly affected by or have a bearing on the Board's decision in the presently pending appeal.

III. STATUS OF THE CLAIMS

The status of the claims in the application is as follows:

Claims 1-3, 5-12, 14 and 16-24 stand finally rejected.

Claims 4, 13, 15 and 25-30 have been withdrawn from consideration.

Claim 18 has been canceled. Therefore, both outstanding Section 102(b) rejections asserted thereagainst are moot.

IV. STATUS OF AMENDMENTS FILED SUBSEQUENT TO THE FINAL REJECTION

A first amendment was filed by the undersigned on August 11, 2003. That amendment was not entered. A supplemental amendment was filed by the undersigned by facsimile transmission on August 11, 2003. The supplemental amendment was entered in its entirety as evidenced by Section 3 of an Advisory Action dated September 5, 2003.

V. SUMMARY OF THE INVENTION

Most broadly, the invention defined in the claims on appeal is addressed to a pollution treatment composition, particularly pollutants caused by spills of petroleum products. The composition is a bioremediation composition that stimulates degradation of petroleum hydrocarbons by microorganisms and is comprised entirely of non-toxic and non-flammable components. First and third components of the composition are formed from microorganism assimilable carbon containing substances. The first component is in an oil phase. The third component is

soluble in the first component and provides viscosity stabilization for extended storage of the composition. A second component of the composition comprises a microorganism nutrient in a water phase emulsion within the first component. The claims on appeal include sole independent claim 1 and claims 2-3, 5-12, 14, 16, 17 and 19-24 which directly or indirectly depend therefrom.

The invention claimed in the claims on appeal provides various novel and practical advantages over currently available bioremediation compositions. Most significantly, the present invention offers an effective, environmentally friendly and completely safe composition that can be used indoors or outdoors and on virtually any surface, including water. Consequently, the claimed composition may be used successfully to clean up oil spills of all sizes ranging from massive marine oil tanker spills to very small indoor residential spills. No other bioremediation composition presently known to Appellants has such versatility.

Presently existing bioremediation compositions were discussed at length in the specification of the present application as well as during prosecution thereof. However, none of these compositions, including those disclosed in the references cited against the claims on appeal, is capable of producing the advantages afforded by the claimed invention now before the Board.

As will be clearly demonstrated hereinafter, the composition defined in all of the claims on appeal is neither disclosed nor suggested, either explicitly or implicitly, by the

references relied upon by the Examiner, whether those references are considered individually or in any conceivable combination.

VI. ISSUES

A statement of each separate ground of objection or rejection Appellant wishes to be reviewed, including the basis of each ground of rejection is as follows:

(1) Claims 1-3, 5-12, 14, 16-18, 20, 21, 23 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tellier et al. (U.S. Patent No. 4,460,692, "Tellier").

(2) Claims 1, 2, 5, 8, 11, 12 and 16-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Freiesleben (U.S. Patent No. 5,171,475).

VII. GROUPING OF CLAIMS

Appellant wishes to group claims 1-3, 5-12, 14, 16, 17, 19, 21-24, on the one hand, and claim 20, on the other hand, as two (2) distinct groups of claims to stand or fall separately by this appeal.

VIII. ARGUMENT

(1) Rejection of Claims 1-3, 5-12, 14, 16-18, 20, 21, 23 and 24 under 35 U.S.C. § 102(b) as being anticipated by Tellier

Claims 1-3, 5-12, 14, 16-18, 20, 21, 23 and 24 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Tellier. Such rejection is respectfully traversed.

At the sixth paragraph on page 3 of the Final Office Action, the Examiner requested a copy of the OSHA (Occupational Safety and Health Administration) exposure list cited on page 6, lines 5-6 of the specification and a copy of the definition of "non-toxic" in SARA (Superfund Amendment and Reauthorization Act of 1986) Title III, Section 313 cited on page 18, lines 7 and 24 of Appellant's specification.

SARA Title III, Section 313 and related federal environmental laws do not specifically define "non-toxic" chemicals. However, they do provide lists of chemicals that are deemed to be toxic and therefore subject to certain federally mandated public safety reporting requirements, e.g., the MSDS (Material Data Safety Sheets) required by Title III, Section 313 of SARA. As part of the amendment filed on August 11, 2003, Appellants responded to the Examiner's request by providing a copy of 40 C.F.R. § 372.65 which identifies toxic chemicals that OSHA and others use to establish safe exposure standards. In addition, Appellants also provided a copy of the EPA (Environmental Protection Agency) "List of Lists" that identifies those toxic chemicals that are subject to SARA Title III, Section 313 reporting requirements. While a lay reader

might incorrectly interpret Appellants' specification at page 18 to suggest that the term "non-toxic" is a defined term under SARA Title III, Section 313, it is not. However, one of ordinary skill in the art of petroleum spill cleanup practices is fully aware that SARA Title III, Section 313 clearly establishes, if not specifically defines, what is a "non-toxic" chemical: that is, if a chemical is not on the list of chemicals subject to MSDS reporting, it is non-toxic under SARA Title III, Section 313. Accordingly, persons of ordinary skill in the relevant art will readily appreciate what is meant by the term "non-toxic" as used in association with SARA Title III, Section 313 at page 18, lines 7 and 24 of the specification.

Incidentally, the Board will note that species of ethylene glycol are the only diluents or solvents specifically identified in the formulation examples discussed in the Tellier patent. Ethylene glycol is listed as a toxic chemical under 40 C.F.R. § 372.65 and is subject to the reporting requirements of SARA Title III, Section 313 (see the "List of Lists" at pages 11 and A-21). The critical importance of this fact will be addressed in detail below.

For the Board's convenience, independent claim 1 on appeal is reproduced herebelow, with emphasis added.

1. (Twice Amended) A composition for treatment of pollution comprising:

a first component comprising a non-toxic, non-flammable, microorganism assimilable carbon containing substance in an oil phase;

a second component comprising a non-toxic nutrient in a water phase, the second component being formed as an emulsion within the first component; and
a third component comprising a diluent added to the first and second components, the diluent comprising a non-toxic, nonflammable, microorganism assimilable carbon containing compound which is soluble in the first component and is selected to facilitate viscosity stabilization for extended storage,

wherein the combination of the first, second and third components provide an initial source for culturing microorganisms present in a pollution site being treated.

As the Board is aware, in order to sustain a rejection under 35 U.S.C. § 102(b), a reference must specifically or inherently disclose every feature or element of a claim as those features are arranged in the claim under scrutiny. As demonstrated below, the Tellier patent clearly does not satisfy this mandate with regard to Appellants' sole independent claim, claim 1. In particular, Tellier does not disclose or suggest a bioremediation microemulsion in which all of its constituent components are non-toxic and nonflammable. Likewise, Tellier is silent as to selection and use of a diluent to maintain the flashpoint of the composition above 100°C and to impart long-term viscosity stability to the composition. These are fundamental aspects of Appellants' invention. Appellants purposely sought to develop a composition that overcomes the toxicity and flammability problems of prior bioremediation compositions that precluded their use in both open and enclosed environments. These are highly critical safety issues since it is intended that the composition of the present invention be available for use in an enclosed environment such as a building. Non-toxic and

non-flammable components are of paramount importance in the use of such a composition within a closed space.

Appellants also purposely sought to develop a bioremediation composition that has long-term viscosity stability, which translates to prolonged product shelf life. The advantage of a long shelf life is that it enables the product to be shipped, stored and used a considerable time after its manufacture. As explained later, this beneficial feature enables Appellants' product to be to be sold and used in very large to very small quantities whereby it may be used in all sorts of industrial, commercial and residential applications.

Like Appellants, Tellier discloses a bioremediation microemulsion of the water-in-oil type. The internal phase of the microemulsion is an aqueous solution of nutrient materials and the external phase is a liquid immiscible with water. The microemulsion is added to a hydrophobic layer to be degraded. Beyond that, the similarities between Tellier and Appellants' claimed invention effectively end.

Essentially, Tellier describes techniques for combating outdoor pollution, especially marine pollution. This is consistent with the fact that in 35 of the 37 composition examples provided in the Tellier patent which do include a solvent or diluent (Examples 1 and 2 do not), the solvent used is the butyl ether of ethylene glycol. As noted above, ethylene glycol is a toxic chemical listed in both the EPA's "List of Lists" and 40 C.F.R. § 372.65. And, as will be shown below, Tellier's preferred solvent, a species of ethylene glycol known as the butyl ether of ethylene glycol, is far more toxic than ethylene glycol.

The Examiner rightly asserts that the teachings of a reference are not limited by its examples. However, at least one passage in Tellier clearly implies that he is unconcerned as to the type of diluent that may be used in his composition (which is not surprising for a bioremediation that is to be used outdoors). See, for example, column 3, lines 51-55 which state:

The viscosity of the microemulsion can be considerably reduced by the addition of an alcohol, particularly C₆ to C₁₂, an ether or an ester of a polyol, particularly glycol. This considerably facilitates manipulative operations.

In contrast, other passages make it clear that the preferred solvent in the Tellier composition is the butyl ether of ethylene glycol, a highly toxic substance which can only be used in outdoor applications.

It is nevertheless recommendable to add liquids permitting reduction of the viscosity of the microemulsion. Various examples of such additives have been cited above. In a particular embodiment of the invention, the butyl ether of ethylene glycol has given excellent results.

Tellier, column 4, lines 61-66.

As regards viscosity, it was found that, without the addition of the butyl ether of ethylene glycol, it is very high (Examples 1 and 2). In contrast, this addition reduces it to very acceptable values (Examples 3 to 11).

Tellier, column 6, lines 64-68.

Furthermore, lest there be any remaining question whether the Tellier formulation is intended for indoor applications, Appellants wish to address a passage in the Tellier patent that

might lead one to the erroneous conclusion that the Tellier formulation may be used indoors. That passage is found at column 4, lines 22-29 and is reproduced herebelow (with emphasis added).

While the invention is of great interest for various operations of biodegradation effected outdoors, it can also be of use in various manufacturing operations in vessels, whenever a hydrophobic layer of a substance is employed in the process. For example, it applies advantageously in the manufacture of proteins from hydrocarbons by degradation of the latter with the aid of bacteria and/or fungi.

The current owner of the present application, International Environmental Products, LLC, is aware of only one process in which a commercialized version of the invention disclosed by Tellier was used by industry in other than an outdoor bioremediation application. That process was also a bioremediation process. However, it was performed in a hermetically sealed container known as a "bioreactor vessel." In that process, the offending petroleum was transported from the contaminated outdoor site to the bioreactor vessel wherein it was brought into contact with the Tellier microemulsion. Bioremediation was thus conducted in the sealed bioreactor vessel as opposed to outdoors. Accordingly, it would be utterly incorrect to equate bioremediation that is conducted in a sealed bioreactor vessel with bioremediation that can be conducted in the open air within a building or other wholly or partially enclosed building space.

In addition, the commercialized version of the Tellier product was the Inipol technology discussed in the paragraph

bridging pages 3 and 4 of Appellants' specification (specifically Inipol EAP22 manufactured by the assignee of the Tellier patent, Societe Nationale Elf Aquitaine (now "Atofina")). As noted by Appellants in that paragraph, the Inipol technology contains a toxic stabilizer (i.e., solvent or diluent) that exceeds OSHA exposure limits. Because of this, the Inipol technology by law cannot be used in the United States in open-air indoor bioremediation in industrial plants and other enclosed areas.

Equally as important, Tellier does not address the issue of flammability, defined by OSHA as having a flash point above 100°C ASTM Closed Cup flammability test. This stands to reason when one considers that the Tellier product was developed for outdoor uses in general and for marine uses in particular. Evidencing Tellier's lack of concern with regard to flammability, he states that C₆ to C₁₂ alcohols, among other compounds, may be used as viscosity reducing agents. C₆ to C₁₂ alcohols are all highly flammable. The following passages underscore this point.

Among applications in the open, water or ground areas, the most important is the degradation of hydrocarbons distributed accidentally. For the reason explained above, that is the fact that the soluble nutrient substances remain in the layer treated instead of being entrained by the water, the invention has a considerable value for combatting marine pollution.

Tellier, column 4, lines 35-41 (emphasis added).

Thus, microemulsions according to the invention allow a degradation of more than 80% of crude petroleum distributed on seawater to be obtained, for example, in seven days, when the nutrient solution contains urea or amino-acids.

Tellier, column 6, lines 35-39 (emphasis added).

See also EXAMPLES 20, 21 and 23-37 at columns 7-11 of Tellier which are specifically directed to tests showing the beneficial results in remediating oil spilled on seawater.

It thus comes as no surprise that Tellier was unconcerned about the flammability characteristics of his product since it was obviously developed as a means to remediate outdoor oil spills, particularly marine spills. It cannot be fairly asserted, therefore, that Tellier expressly or impliedly teaches any advantage in assuring that a bioremediation formulation be non-flammable.

Appellants describe in great detail the serious disadvantages of existing prior art bioremediation compositions, e.g., exposure and transportation problems associated with flammable and/or toxic chemicals. Please see, for example, page 3, line 24 to page 5, line 13. The products taught by the Tellier disclosure suffer those same limitations. The claimed invention improves upon the type of composition disclosed or suggested by Tellier by specifically requiring that all of its components be both non-toxic and non-flammable in order to eliminate or substantially reduce the toxicity and flammability problems associated with existing bioremediation materials such as those taught by Tellier.

Another factor which limits the use of commercial products of the type described in Tellier, i.e., the Inipol product, is their comparative lack of viscosity stability. The compounds set out in Tellier for the purpose of reducing viscosity do not result in a stable and usable liquid over time. The present owner of the instant application, International Environmental Products, LLC, avers that the Inipol product has a shelf life of a few weeks.

In stark contrast, the presently claimed invention results in a composition with far greater shelf life and temperature stability whereby it may be applied to polluted surfaces over a considerably longer period of time. See page 18, lines 16-21 of Appellants' specification which state that the composition maintains a stable viscosity, i.e., it does not thicken, whereby it has a shelf life of 6 months or more.

Taken as a whole, therefore, Tellier teaches that (1) solvents or diluents are optional, (2) if solvents are present, they may be any one of an alcohol, particularly C₆ to C₁₂, an ether or an ester of a polyol, particularly glycol, (3) highly toxic butyl ether of ethylene glycol is the preferred solvent, and (4) flammability of the composition is not a concern. Appellants respectfully submit that, in totality, the combination of these teachings does not constitute either explicit or implicit disclosure of a bioremediation microemulsion having a mandatory diluent component that is both non-toxic and nonflammable and that promotes long term viscosity stability, whereby the product may be used for both outdoor and indoor applications.

At Section 4 of the aforementioned Advisory Action, the Examiner states: "Appellants argue that ethylene glycol is toxic. However, Tellier discloses the butyl ether, which is not listed as toxic." Appellants presume by this statement the Examiner means that the butyl ether of ethylene glycol is not listed on the EPA's "List of Lists" or 40 C.F.R. § 372.65 which accompanied Appellants' August 11, 2003 amendment. That is correct, it is not. The EPA's "List of Lists" or 40 C.F.R. § 372.65 list only certain specific chemicals and certain genera

of chemicals as being toxic. They do not list all species of chemicals within those genera that are also toxic for to do so would render the lists unworkably lengthy and unwieldy. The butyl ether of ethylene glycol is a species of ethylene glycol, which is toxic. Thus, a meaningful way to determine whether the butyl ether of ethylene glycol is considered a toxic chemical is to compare its toxicity to that of ethylene glycol.

In this regard, the Board's attention is directed to attached Exhibit A.¹ That exhibit includes comparative listings of the chemical characteristics (including toxicity) of ethylene glycol and the butyl ether of ethylene glycol. Using the LD50 rating² of the two chemicals as administered orally to a test rat population as an example (wherein the LD50 rating is the amount of material required to kill half the test population), Exhibit A shows that the LD50 rating of ethylene glycol is 4700 mg/kg and the toxicity of the butyl ether of ethylene glycol is 1480 mg/kg. Clearly, the butyl ether of ethylene glycol is significantly more toxic than ethylene glycol. This conclusion is further borne out in the NFPA Hazard Rating³ portion of the listings which identifies ethylene glycol as "moderately hazardous" and the butyl ether of ethylene glycol as "hazardous." Hence, the butyl ether of ethylene glycol is, in fact, a very toxic chemical.

In determining whether a reference anticipates a patent claim, the Court of Appeals for the Federal Circuit has

1 The data in Exhibit A is published by the the National Toxicology Program (NTP). Within the U.S. Department of Health and Human Services, NTP is an interagency program headquartered at the National Institutes of Health's National Institute of Environmental Health Sciences (NIEHS) located in Research Triangle Park, NC.

2 The higher the LD50 rating the less toxic the material.

3 NFPA is the National Fire Protection Association. NFPA has developed an extensively used system for indicating the health, flammability and reactivity hazards of chemicals.

unwaveringly maintained that it is not sufficient that each element of the claim may be found somewhere in a reference, but that the elements must be arranged as in the claim. "[A] finding of anticipation requires that the publication describe all of the elements of the claims, arranged as in the patented device." *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d, 1340, 1349 (Fed. Cir. 1998), *rehearing denied & suggestion for rehearing in banc declined*, 161 F.3d 1380 (Fed. Cir. 1998), *cert. denied*, 526 U.S. 1130 (1999) (emphasis added). "[T]here is no anticipation 'unless all of the same elements are found in exactly the same situation and united in the same way ... in a single prior art reference.'" *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894 (Fed. Cir. 1984) (emphasis added). See also, *Glaverbel Societe Anonyme v. Northlake Marketing & Supply, Inc.*, 45 F.3d 1550 (Fed. Cir. 1995); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989); *Jamesbury Corp. v. Litton Industrial Products, Inc.*, 756 F.2d 1556 (Fed. Cir. 1985); and *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542 (Fed. Cir. 1983).

It is not lightly to be assumed, therefore, that the unique combination of compounds that achieve Appellants' very beneficial objectives may be inferred or divined from the predominantly flammable and/or toxic chemicals disclosed by Tellier. Rather, the opposite is true. Appellants' were aware of the Tellier patent and the Inipol product, yet the present invention required considerable investigation and testing to produce an effective formulation that realized all of the disclosed and claimed features of their invention. The end result was a highly effective bioremediation product having long-lasting viscosity stability that is safe for use both indoors and out as well as in fire hazard environments. Tellier's disclosed compositions simply have never satisfied these requirements.

Moreover, the many beneficial aspects of Appellants' claimed formulation open up significant new markets for bioremediation products that would be unavailable to products such as Tellier's (which are burdened with excessive toxicity and flammability and have unacceptably short shelf lives). Specifically, Appellants' product may be used by industrial, commercial and even residential users with complete safety and ease. For instance, a retail consumer may use Appellants' product to safely remove automobile grease or oil deposits from his or her garage floor. Because Appellants' product may be formulated to have a viscosity whereby it may be sprayed from a pump-type spray bottle, for example, a user may simply spray the target area and allow the product to perform its bioremediation function. And, because of its long and practical shelf life, the end consumer is able to store and reuse any unused product for many months after purchase. These features make Appellants' claimed composition far more commercially versatile than those taught by Tellier.

For these many reasons, the presently claimed invention represents a significant, unanticipated and patentable departure from the compositions described by Tellier. Appellants respectfully offer that their particular solution to their particular problem is neither disclosed nor suggested, either expressly or impliedly, by Tellier. Indeed, Appellants reiterate that it was the very shortcomings of toxicity and flammability in the Tellier composition as embodied in the Inipol technology that inspired Appellants to conceive and develop the presently disclosed and claimed solution to the problem.

To conclude, it is clear that the Tellier patent does not and cannot be fairly construed to anticipate the present invention as most broadly recited in independent claim 1. Indeed, in several

critical respects Tellier leads one of ordinary skill in the art directly away therefrom. Accordingly, Appellants kindly submit that the outstanding rejection of claim 1 and its dependent claims 2, 3, 5-12, 14, 16, 17, 21, 23 and 24 under Section 102(b) in reliance upon Tellier is improper and should be reversed.

Likewise, Tellier does not and cannot disclose the narrower expression of Appellants' invention prescribed in claim 20 on appeal. That claim is reproduced herebelow for the Board's convenience (with emphasis added):

20. A composition as claimed in claim 1 wherein the diluent is selected so as to maintain a flashpoint for the composition above 100°C.

The underscored limitation of claim 20 is conspicuously absent in the Tellier patent, either expressly or under principles of inherency. Again, this is to be expected since Tellier developed the Inipol composition for remediation of outdoor, in particular marine, petroleum spills. Under these bioremediation conditions, assuring that the flashpoint of the composition remained above OSHA's flammability threshold is not a concern and, therefore, was not a concern to Tellier. Accordingly, claim 20 stands independently patentable vis-à-vis Tellier under #5 U.S. C. § 102(b) and the Examiner's rejection of that claim on that basis should be reversed.

(2) Rejection of Claims 1, 2, 5, 8, 11, 12 and 16-23 under 35 U.S.C. § 102(b) as being anticipated by Freiesleben

Claims 1, 2, 5, 8, 11, 12 and 16-23 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Freiesleben. Such rejection is respectfully traversed.

Freiesleben is easily differentiated from the presently claimed invention. Most importantly, the Freiesleben product is a conventional degreaser or cleaner rather than a bioremediation formulation. Freiesleben is silent as to any disclosure or suggestion of microorganisms playing a role in the petroleum cleanup process. Moreover, although the Freiesleben patent is entitled SOIL-REMOVAL MICROEMULSION COMPOSITIONS, the "soils" described throughout the patent are not earthen soil, or the like, from which unwanted petroleum products are to be removed. Rather, they are the petroleum products themselves. See, for example, EXAMPLE 1, "Soil Removal Assessment" at column 9, line 31 through column 10, line 16 which is reproduced below.

Standard tarsand soils were prepared by smearing 2.5 cm X 2.5 cm X 0.3 cm tarsand (alternatively jesco grease or 80-10 mixtures of tarsand and jesco could have been similarly prepared) on Q-panels (i.e., metal testing panels having a Q-shaped hole) and baking the applied soil for 30 minutes at 120°C. The panels were thereafter left to attain atmospheric equilibrium for 24 hours. This procedure is referred to in the claims as Q-panel testing.

Other test soils such as multi-use and automotive greases, gear oils, or automotive under coatings could be prepared for assessment in the same manner.

Finally, test soils could be alternatively prepared as follows: Roofing tars or soils containing plasticizers or any type of soil combination (greases, oils, waxes, etc.) are smeared on metal panels and exposed to the elements (e.g., on roofs or walls) for aging. The applied soil thickness is in all cases controlled via an applicator gauge.

The chemical process by which the Freiesleben composition performs its petroleum cleaning function is set forth at column 4, line 36 through column 5, line 53. Particularly relevant excerpts thereof are reproduced below (with emphasis added).

It is well known in the art that in order to have effective cleaning agents, the soil to be removed must be penetrated, solvated and removed (sequestered) from the substrate and dispersed in a cleaning medium. Penetration and dispersion are achieved by surfactants. Ionic surfactants affect the electrostatic properties of the surface to which they adsorb (or film in which they are resident). Nonionic surfactants by orienting their hydrophilic moiety into the so-called Stern layer surrounding a wetted soil particle (assuming the medium is aqueous) promote dispersion and inhibit agglomeration.

Similar principles apply to stabilization of cleaning emulsion compositions. Stability of an emulsion is promoted by surfactants which act as emulsifiers. They should have good solubility in both the aqueous and the oil phase. Often, combinations of surfactants are more effective as emulsifiers than single compounds, as is well known in the art. See, generally *Surfactants and Interfacial Phenomena*, M. J. Rosen, Wiley 1978.

The electrical properties of a film or surface are very important in stability of cleaning emulsions and in effectiveness of cleaning ability. The electrostatic surface charges can be measured, but expensive equipment is necessary. A simpler method for optimizing stability and cleaning performance of emulsions is provided below by the present invention.

Refractive index and polarity of a liquid provide a measure of the electrostatic properties of that liquid. The present inventor was able to correlate the cleaning ability of various emulsions to the polarity and refractive index of their ingredients and corresponding concentration of each ingredient in the progenitor solution.

Freiesleben, column 4, lines 36-67.

The foregoing passage is unambiguous about the manner by which the Freiesleben product removes petroleum deposits. The Freiesleben composition functions essentially the same as a typical dishwashing detergent does in penetrating, solvating and dispersing cooking oils and greases. Not surprisingly, the patent most cited in Freiesleben as disclosing surfactants suitable for use in the Freiesleben formulation is U.S. Patent No. 4,414,128. That patent is entitled LIQUID DETERGENT COMPOSITIONS.

Freiesleben does not employ microorganisms that are necessary for bioremediation. As such, he does not teach or suggest, for example, Appellants' second component of independent claim 1, namely:

a second component comprising a non-toxic nutrient in a water phase, the second component being formed as an emulsion within the first component.

Being that the Freiesleben technology does not relate in any way to bioremediation, Freiesleben does not disclose or suggest any need for or advantage of providing non-toxic nutrients in the inner water phase of his emulsion. In stark contrast, the nutrient-containing inner water phase is an essential ingredient of Appellants' product and must be present for the proper functioning of their invention.

Interpreting Freiesleben, the Examiner states "Compounds containing nitrogen are specified (Table 2)." The Examiner will note that Table 2 is a list of emulsifiers which make up the outer oil phase rather than the inner water phase of the emulsion. Nitrogen present in the outer phase of a water-in-oil bioremediation emulsion would be rapidly metabolized by the microorganisms used in the remediation process. As a consequence, the nutrient supply would be quickly depleted and the bioremediation process would be effectively halted before it could perform meaningful cleanup.

In diametric opposition to Freiesleben, Appellants purposely provide dissolved nitrogen and/or phosphorous containing nutrients in the inner water phase of their microemulsion in order to promote a so-called "timed-release" of the nutrients. The result is a long-lasting, and therefore more effective, bioremediation process when Appellants' emulsion is applied to a contaminated surface. See, for example, Appellants' specification at page 13, line 18 through page 14, line 4.

Additionally, in the paragraph bridging columns 8 and 9 of Freiesleben, he states that optional electrolytes *could* be provided in his emulsion, but he emphasizes that they are not necessary. He also does not state for what purposes they may be used or in what phase of the emulsion they may be incorporated. When reasonably and properly construed, it is clear that that passage simply does not provide express or even implied teaching of (1) a water soluble microorganism nutrient (2) contained in the inner water phase of a bioremediation emulsion for (3) enabling long term nourishment of microorganisms.

Upon reconsideration of Freiesleben, therefore, Appellants' trust the Board will agree that Freiesleben cannot be fairly interpreted to anticipate the present invention as most broadly recited in independent claim 1. Accordingly, Appellants kindly submit that the outstanding rejection of claim 1 and its dependent claims 2, 5, 8, 11, 12, 16, 17, 19 and 21-23 under Section 102(b) in reliance upon Freiesleben is improper and should be reversed.

Likewise, Freiesleben (like Tellier) does not and cannot disclose the narrower expression of Appellants' invention prescribed in claim 20 on appeal. Again, that claim is reproduced herebelow for the Board's convenience (with emphasis added):

20. A composition as claimed in claim 1 wherein the diluent is selected so as to maintain a flashpoint for the composition above 100°C.

Freisleben makes a single brief reference to the flashpoint characteristics of his desired diluent or solvent at column 7, lines 15-17:

Nonaromatic solvents, especially those having a flash point higher than 140°F. [60°C.], are preferred for environmental reasons.

Without more, however, this isolated statement is neither express or implied teaching of a diluent that is selected so as to maintain the flashpoint of the entire composition above 100°C. Accordingly, claim 20 is independently patentable vis-à-vis Freiesleben and the final rejection of that claim under 35 U.S.C. § 102(b) should be reversed.

To conclude, Appellants' claims on appeal must be interpreted fairly and accurately. Likewise, the teachings of the prior art cited against those claims must be fairly and accurately interpreted for what they in fact disclose and/or suggest. The disclosures of the cited references, when so interpreted, do not disclose or suggest Appellants' claimed invention. Therefore, the invention as a whole was not anticipated by the teachings of either Tellier or Freiesleben at the time of Appellants' invention.

Respectfully submitted,

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Date: October 13, 2003

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IX. APPENDIX

The claims on appeal are as follows:

1. A composition for treatment of pollution comprising:
 - a first component comprising a non-toxic, non-flammable, microorganism assimilable carbon containing substance in an oil phase;
 - a second component comprising a non-toxic nutrient in a water phase, the second component being formed as an emulsion within the first component; and
 - a third component comprising a diluent added to the first and second components, the diluent comprising a non-toxic, non-flammable, microorganism assimilable carbon containing compound which is soluble in the first component and is selected to facilitate viscosity stabilization for extended storage,wherein the combination of the first, second and third components provide an initial source for culturing microorganisms present in a pollution site being treated.
2. A composition as claimed in claim 1 wherein the first component is a microorganism assimilable carbon containing composition.
3. A composition as claimed in claim 1 wherein the first component is selected from the group consisting of fatty acids, esters, alcohols and combinations thereof.
5. A composition as claimed in claim 1 wherein the oil phase is a straight chained, lipophilic carbon source.

6. A composition as claimed in claim 1 wherein the first component comprises an acid selected from the group consisting oleic acid, stearic acid and combinations thereof.

7. A composition as claimed in claim 6 wherein the concentrations ranging between about 206 and 506 by weight.

8. A composition as claimed in claim 1 where in the first component comprises an external phase and the second component is an internal phase, the external and internal phases of the composition being in the form of a microemulsion.

9. A composition as claimed in claim 8 wherein the microemulsion comprises droplets having a size of about 20 to about 400 angstroms.

10. A composition as claimed in claim 9 wherein the microemulsion comprises droplets having a size of about 100 to about 200 angstroms.

11. A composition as claimed in claim 1 wherein the carbon in the oil phase provides an initial source of carbon for culturing microorganisms in a pollution site being treated.

12. A composition as claimed in claim 1 wherein the second component comprises a source of nitrogen.

14. A composition as claimed in claim 12 wherein the nitrogen is in a non-toxic form and is selected from the group consisting of urea, cyanamide, and combinations thereof.

16. A composition as claimed in claim 1 further comprising water.

17. A composition as claimed in claim 1 wherein the diluent is present in sufficient amounts so as to facilitate the even application of the composition to a pollution area.

19. (Original) A composition as claimed in claim 1 wherein the diluent is butyl carbitol [2-(2-butoxyethoxy)ethanol].

20. (Original) A composition as claimed in claim 1 wherein the diluent is selected so as to maintain a flashpoint for the composition above 100°C.

21. A composition as claimed in claim 1 wherein the diluent is present in the composition in the amount of about 15 to about 350 by weight.

22. A composition as claimed in claim 1 wherein the diluent comprises an ethoxylated alcohol.

23. A composition as claimed in claim 1 wherein the diluent is selected to facilitate a reduction in viscosity of the first and/or second components to less than 200cSt to allow delivery by spray or other dispersion methods.

24. A composition as claimed in claim 1 comprising 20 to 50% by weight carbon, 0 to 30% by weight nitrogen, phosphorus.